

JOB SAFETY ANALYSIS	Project No.: To be defined
Job/Operation Title: Watercraft Operations	Date: 30 August 2016
Department/Division/Section: Industrial/Environmental	Analysis Developed By: Laura Klein
Location: Flathead River, Columbia Falls, Montana	Analysis Reviewed By: Lauren Knickrehm and John Jindra, Kennedy/Jenks Consultants
Person(s) Performing This Job: Laura Klein, Kennedy/Jenks Consultants	Project Manager: Lauren Knickrehm, Kennedy/Jenks Consultants
Job Start Date: 8 September 2016	Duration: Estimated 12 hours on water; 4 hours mobilizing/demobilizing boat

Task/Step	Potential Hazards	Recommended Safe Job Procedures
Hauling to a location	Injury to employee or public during travel, Damage to equipment,	Use a hauling vehicle of adequately rated capacity and capability. Preform a pre-trip inspection on the trailer. Make sure it is road worthy, if not, DO NOT USE! Make sure all lights are working and you have the correct size trailer hitch ball and it is correctly and securely attached to the vehicle. The driver must be proficient in driving with a trailer on a roadway and backing of a trailer. Make sure all items are secure and will not fall off or blow out of the trailer during travel. When hauling a motor boat make sure the motor is secure. Drive defensively. Obey traffic laws. Do not eat, drink, smoke, use mobile phones or perform others tasks that interfere with driving.
PPE	Injury, Illness, Exposure, Drowning	Personnel Flotation Device (PFD) is "required" to be worn at all times while in a watercraft on the water. It should be of proper size and US Coast Guard Approved. PFD must be inspected prior to each use. Communication equipment of some type, either a radio, mobile phone, SAT phone or Marine radio must be on the water craft while in use. Warm clothing and rain gear is a good idea to carry along to help prevent hypothermia while on the water. Use non skid boots while traveling in the watercraft to prevent slips and falls.

Task/Step	Potential Hazards	Recommended Safe Job Procedures
		<p>Make sure all tools and equipment are properly protected while on board the watercraft and are clear of passengers and the fuel supply.</p> <p>Balance of equipment and on the watercraft is extremely important to ensure a safe water experience.</p> <p>All personnel will carry an emergency rescue knife at all times when on the watercraft.</p>
Loading and Unloading and Fueling the Boat	Injury, Fire from fueling	<p>Make sure boat ramp is clear of obstructions. Engage four wheel drive when necessary. Set parking brake when trailer is lowered to proper launch depth. Lower drivers side window of the tow vehicle. Use spotter if available. Make sure spotter does not stand behind vehicle on boat ramp. Be aware of wet and slippery boat ramp surface from water, algae, etc. Be aware of tension and pinch points on trailer winch when unhooking vessel.</p> <p>Use non-skid surface, if available, while loading and unloading watercraft. Enter slowly and keep a good low center of gravity while entering the watercraft. Enter watercraft on operators command. No smoking is allowed while in watercraft if gas or any type of fuel in on board. No smoking while refueling the watercraft.</p>
Underway	Capsizing, Person overboard, Rough water, Collision, Fire	<p>Be observant of other boat traffic and rocks while on the water.</p> <p>If needed, have a map of the waterbody or destination of trip on board watercraft.</p> <p>All personnel must wear approved PFD while underway on the water at all times.</p> <p>Use proper speed for the conditions, make sure all tools and equipment are secured in a fashion that it will not blow out of the watercraft.</p> <p>Have look outs posted for rocks if needed, carry extra safety equipment such as: Cell Phone (service is available at project location) or Radio, Tools, Kicker Motor, Oaks, Paddles, Extra Fuel and Extra food and Clothing.</p>
Tying up to shore, Dock Use	Damage to Boat or Motor, Lost Boat	<p>Keep lines and anchors properly stowed. Inspect prior to use and make sure they are properly attached to the watercraft. Make sure the the watercraft is securely anchored to shore and pulled up in a fashion that the watercraft will not sustain damage from</p>

Task/Step	Potential Hazards	Recommended Safe Job Procedures
		waves, wind or adverse weather. If docked on a dock make sure the watercraft is secured on the bow and stern of the watercraft. Raise motor to prevent damage to the prop while anchored to the shore.
Maintenance	Condition of equipment	Boat motors must be maintained yearly. The lower unit grease should be changed each year. Prop should be inspected for cracks. If damage appeared the prop should be replaced prior to use. Four Stroke motors should have the oil and oil filter changed. Gas should be drained from the gas line for winter storage. Spark plugs and gas filter should be replaced yearly if needed. Make sure the drainplug is in the watercraft and properly attached prior to putting to watercraft in the water. Do a visual inspection of the watercraft prior to use.
Transportation of Fuel in Watercraft	Fuel spills, Fire	No Smoking while fuel of any kind is in the watercraft. All fuel "must" be transported in a approved and proper container. (See Health and Safety Code book and OSHA regulations) for more details. Make sure all containers are transported in an upright position and are secure for travel in the watercraft. Keep fuel away from personnel clothing and equipment to prevent contact.
Emergency Procedures	Illness or Injury	<p>Notify Emergency Services of an emergency via radio or mobile phone or SAT phone.</p> <p>Maintain current CPR/First Aid certification</p> <p>Treat the Injury as qualified to do so.</p> <p>Be prepared to give the following Patient Assessment information to Emergency Services:</p> <p>Location in which injured party is: (waterbody name, etc.)</p> <p>Type of Injury</p> <p>Severity of Injury</p> <p>Plan of extraction</p> <p>Closest boat landing or portage</p> <p>Notify your Project Manager and Health and Safety Manager as soon as possible about the Incident and fill out the proper reporting forms.</p>

POTENTIAL PHYSICAL HAZARDS OF THIS JOB

Physical Hazards	Prob.	Sev.	Consequences
Adverse weather stresses	2	3	Exposure to cold or heat (heat exhaustion or stroke / Hypothermia or frost bite)
Flammable materials and liquids	1	4	Exposure (inhaling, swallowing, or absorbing) to harmful levels of liquids or vapors, aerosols,
Noise (Sound Pressure Level), dBA	1	2	Exposure to excessive noise (damage to hearing)
Hand and power tools	3	4	Cuts, punctures or abrasions. Excessive lifting, twisting, pushing, pulling, reaching, or bending. Exposure to excessive vibrations. Fatigue or overexertion. Awkward or static position. Penetration by sharp object.
Rolling or pinching objects	3	3	Caught in or between a stationary/moving object
Slippery or uneven surfaces	3	3	Tripping or falling (injury to body)
Vehicle Equipment Traffic	2	4	Damage to equipment or vehicle
Work around, in, and/or over water	2	5	Drowning, cold related stresses

POTENTIAL CHEMICAL HAZARDS OF THIS JOB

Chemical Hazards	Description/Health Hazards
Fuel	See SDS(s) attached to the HARP

POTENTIAL BIOLOGICAL HAZARDS OF THIS JOB

Biological Hazards	Prob.	Sev.	Consequences
Insect bites or stings (mosquitoes, bees, ticks)	1	2	Allergic reactions Reaction to venom

HAZARD CONTROL MEASURES USED FOR THIS JOB

Administrative Controls: Certified operators Emergency procedures Inspections (pre-job and ongoing) work areas, equipment, tools, etc. Notification and communication procedures Operating instructions (watercraft) Hazard Appraisal and Recognition Plan (site specific) Safety checklists (use to document inspections) Safety meeting (pre-job) Safety meetings - on-going (e.g., daily or weekly tailgate safety) Trained personnel Two man task Weather forecast (pre-job)	Required Training: Emergency plans and fire prevention plans Watercraft operation First aid/CPR General Safety Hearing protection Injury illness prevention Personal protective equipment (PPE) Tools
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HAZARD CONTROL MEASURES USED FOR THIS JOB	
Engineering Controls: NA	Required PPE: PFD Level D Clothing (appropriate for weather conditions) Gloves - work gloves Hearing protection Safety glasses Slip resistant water boots Other PPE:
Required Permit(s): NA	Other Information:

Severity	Probability
S-1 = 1	P-1 = Low
S-2 = 2	P-2 = Medium
S-3 = 3	P-3 = High
S-4 = 4	
S-5 = 5	